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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,672	10/18/2004	Shigeru Tomoeda	28951.2176	4239
27890 7590 01/17/2008 STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			EXAMINER ENSEY, BRIAN	
			ART UNIT 2615	PAPER NUMBER
			MAIL DATE 01/17/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/511,672	TOMOEDA ET AL.	
	Examiner	Art Unit	
	Brian Ensey	2615	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11 and 13-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-41 is/are allowed.
- 6) ☒ Claim(s) 1-9, 11 and 13-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/18/04 & 5/10/07 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5, 7, 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akinori Japanese Patent Publication 2003-032786 in view of Sabato Japanese Patent No. 411205897 A.

Regarding claim 1, Akinori discloses a loudspeaker comprising: a magnetic circuit including; at least two parallel bar magnets (9) located between an upper plate (7) and a lower plate (11), and a bar-shaped pole piece (12) parallel to and located between the bar magnets, the bar magnets, the upper plate, the lower plate, and the pole piece forming an outer magnet type magnetic circuit; a frame (5) coupled to the magnetic circuit; a diaphragm (1) coupled to a perimeter of the frame; and a voice coil (4) having a portion located in a magnetic gap of the magnetic circuit (See Figs1-3 and abstract). Akinori does not expressly disclose the voice coil and magnetic gap have the shape of a track. However, the use of track shaped voice coils and magnetic gaps is well known in the art and Sabato teaches a tracked shaped speaker comprising a tracked shaped voice coil (See translation paragraph 0024 and abstract solution, "a track type...is freely formed without sacrificing an output sound pressure"). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a track shaped speaker/ voice coil in place of the rectangular speaker/voice coil as taught by Akinori for

sufficient output sound pressure in a slim compact shape (See Sabato translation paragraph 0024 and abstract solution).

Regarding claims 2-4, the combination of Akinori in view of Sabato further discloses the magnetic gap, the outer configuration of the magnetic circuit and the external configuration of the diaphragm are that of a track (See translation paragraph 0024 and abstract solution, “a track type...is freely formed without sacrificing an output sound pressure”).

Regarding claim 5, the combination of Akinori in view of Sabato further discloses the magnetic gap at least has a straight section (See Akinori Fig. 1).

Regarding claim 7, the combination of Akinori in view of Sabato further discloses the magnetic circuit comprises the lower plate divided in the vertical direction (See Akinori Fig. 1, lower plate 11 comprises two independent plates and therefore meets the disclosed limitation).

Regarding claim 9, the combination of Akinori in view of Sabato further discloses the magnetic circuit comprises the lower plate divided in the direction of thickness (See Akinori Fig. 1, lower plate 11 comprises two independent plates and therefore meets the disclosed limitation).

Regarding claim 15, the combination of Akinori in view of Sabato further discloses the lower plate (11) is the bar-shaped pole piece (See Akinori Fig. 1).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Akinori in view of Sabato as applied to claim 1 above, and further in view of Nakaso U.S. Patent No. 6,654,475.

Regarding claim 6, the combination of Akinori in view of Sabato discloses a loudspeaker as claimed. The combination of Akinori in view of Sabato does not expressly disclose the magnetic circuit is formed by dividing the upper plate. However, the use of divided upper plates

is well known in the art and Nakaso teaches a magnetic circuit is formed by dividing the upper plate (8) (See Fig. 21). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the single upper plate of the combination of Akinori in view of Sabato with the split upper plate of Nakaso for ease of manufacturing and weight reduction.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Akinori in view of Sabato as applied to claim 1 above, and further in view of Sueaki Japanese Patent Publication 05-191892.

Regarding claim 8, the combination of Akinori in view of Sabato discloses a loudspeaker as claimed. The combination of Akinori in view of Sabato does not expressly disclose the lower plate comprises a bent metal sheet. However, the use of bent metal lower plates is well known in the art and Sueaki teaches a lower plate (14) with edges bent in an upward direction into the magnetic gap (See Sueaki Fig. 2). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a bent lower plate for ease of manufacturing (No casting required. Piece can be made from a single flat sheet).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Akinori in view of Sabato as applied to claim 1 above, and further in view of Sabato et al. U.S. Patent No. 6,188,774.

Regarding claim 11, the combination of Akinori in view of Sabato discloses a loudspeaker as claimed. The combination of Akinori in view of Sabato does not expressly disclose the upper plate is fabricated by bending a metal sheet. However, Sabato '774 teaches an upper plate (4) fabricated by bending a metal sheet (See Fig. 1 and col. 2, lines 39-53). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the

invention to replace the top plate of the combination of Akinori in view of Sabato with the bent top plate of Sabato for accurate magnet gap to reduce abnormal sounds (See Sabato '774 abstract).

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Akinori in view of Sabato as applied to claim 1 above, and further in view of Miwa Japanese Patent No. 2000-201396A.

Regarding claims 13 and 14, the combination of Akinori in view of Sabato does not expressly disclose a module that comprises the loudspeaker of claim 1 and an electronic circuit or an electronic apparatus equipped with the loudspeaker of claim 1. However, the use of miniature loudspeakers in electronic modules or circuits is well known in the art and Miwa teaches a track shaped speaker for use in a portable phone. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to use the miniature tracked shaped speaker of the combination of Akinori in view of Sabato in the portable phone as taught by Miwa (Therefore being connected to an electronic circuit and used in an electronic module) to obtain sufficient output and sound quality while saving space (See Miwa abstract).

### ***Response to Arguments***

Applicant's arguments filed 10/3/107 have been fully considered but they are not persuasive.

With respect to the applicant argument with respect to claims 1-5, 7, 9 and 15 that Sabato *fails to disclose or suggest a loudspeaker having a track-shaped voice coil and a track-shaped magnetic gap*, the Examiner respectfully disagrees.

The Examiner points to the abstract solution and figure 2 of Sabato (JP 411205897) which clearly illustrate a rectangular magnetic gap and voice coil. Further, Sabato clearly anticipates other structures including track shaped structures as stated in the abstract solution. Therefore, it is the opinion of the examiner that Akinori in view of Sabato meet the limitations as discussed in the rejection of the claims above.

With respect to the applicant argument with respect to claims 6, 8, 11, 13 and 14 that *there is no disclosure in Akinori or Sabato that discloses or suggests applicants' claimed invention*, the Examiner respectfully disagrees.

The Examiner asserts that the claimed invention is obvious over Akinori in view of Sabato as discussed above. Further, the additional limitations are clearly well known in the art and would have been obvious variations as discussed in the claim rejections above.

#### ***Allowable Subject Matter***

Claims 16-41 are allowed.

Claims 26, 27, 39 and 40 which depend from claims 16 (26 and 27) and 29 (39 and 40) are regarded as independent claims since they consist of a separate structures comprising the component and all its limitations as claimed in their respective independent claims.

#### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Monday - Friday 6:00 AM - 2:30 PM.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
P.O. Box 1450  
Alexandria, Va. 22313-1450

**Or faxed to:**

(571) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "PROPOSED" or "DRAFT".

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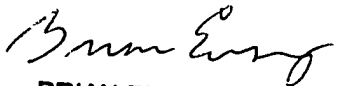
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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BRIAN ENSEY  
PRIMARY EXAMINER  
1/14/08